



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,865	09/06/2006	Naoto Ikegawa	80089(302721)	3441
21874 7590 10/10/2008 EDWARDS ANGELL PALMER & DODGE LLP P.O. BOX 55874 BOSTON, MA 02205				
EXAMINER				
DOLLINGER, MICHAEL M				
ART UNIT		PAPER NUMBER		
1796				
MAIL DATE		DELIVERY MODE		
10/10/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/591,865

Applicant(s)

IKEGAWA ET AL.

Examiner

MICHAEL DOLLINGER

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF 298)
Paper No(s)/Mail Date 09/06/2008
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Claim Objections

1. Claim 7 is objected to because of the following informalities: the word "forth" in line 1 is misspelled "froth". Appropriate correction is required.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-5 and 7-9 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 13 of copending Application No. 10/591,706. Although the conflicting claims are not identical, they are not patentably distinct from each other. It is clear that all the elements of the instant

claims 1-5 and 7-9 are to be found in the copending claim 13 (as instant claims 1-5 and 7-9 fully encompasses copending claim 13). The difference between the instant claims 1-5 and 7-9 and the copending claim 13 lies in the fact that the copending claim 13 includes more elements and is thus more specific. Thus the invention of copending claim* is in effect a "species" of the "generic" invention of instant claims 1-5 and 7-9. It has been held that the generic invention is "anticipated" by the "species". See *In re Goodman*, 29 USPQ2d 2010 (Fed. Cir. 1993). Since instant claims 1-5 and 7-9 are anticipated by the copending claim 13, they are not patentably distinct from each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-6 and 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Furuta et al (US 5,891,532).

5. Furuta et al disclose molded films [abstract] of a liquid crystal polyester resin composition comprising (A) 56 through 99% by weight of a liquid crystal polyester [abstract] and (B) 44 through 1% by weight of a thermoplastic resin having an epoxy

group [abstract]. The liquid crystal polyester (A) is preferably formed from 30 through 80% by mole of a repeating unit derived from p-hydroxybenzoic acid, 10 through 35% by mole of a repeating unit derived from an aromatic dicarboxylic acid, and 10 through 35% by mole of a repeating unit derived from an aromatic [column 7 line 63 through column 8 line 22]. Since Furuta et al disclose only 5 alternatives for hydroxycarboxylic acids and 2-hydroxy-6-naphthoic acid is one of them [column 6 lines 11-40], one having ordinary skill in the art would have readily envisaged a polymer with the above molar amounts of repeating units with 2-hydroxy-6-naphthoic acid in place of repeating units derived from p-hydroxybenzoic acid. The thermoplastic resin component (B) is preferably an epoxy group-containing ethylene copolymer comprising (a) 60 through 99% by weight of an ethylene unit and (b) 0.5 through 25% by weight of a glycidyl unsaturated carboxylate unit or an unsaturated glycidyl ether unit [column 8 lines 54-61]. Furuta et al disclose a method of molding a film wherein the molding temperature is between 60°C below and 60°C above the flow temperature of the liquid crystal resin composition [column 12 lines 11-14]. Since the polymer and processing temperatures disclosed in Futura et al are the same as those claimed, it is held that the claimed change in dielectric loss tangent is inherent.

6. Regarding claims 10 and 11, the claims recite limitations on the process of preparing the liquid crystal polyester and the monomers contained therein. However, what is actually claimed is a method for preparing a resin molded article of liquid crystalline polyester with a lowered dielectric loss tangent. Henceforth any limitations on the preparation of the polymer are product-by-process limitations and irrelevant to

patentability in the absence of unexpected results in the form of a structural difference in the resulting composition. Since Furuta et al disclose anticipatory liquid crystal polyesters, discussed above, all the limitations of claims 10 and 11 are met.

7. Claims 1-3 and 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Haider et al (US 5,216,073).

8. Haider et al disclose a moldable thermoset composition comprising a liquid crystal polymer (LCP) and an epoxy functional rubber which is heat treated to make it set [abstract]. The LCP may be a polymer comprising monomer units of 4-hydroxybenzoic acid, 6-hydroxy-2-napthoic acid, terephthalic acid, and biphenol [column 3 lines 53-56]. The epoxy functional rubber composition may be a terpolymer of ethylene, glycidyl methacrylate and acrylate units [column 4 lines 1-5] or a graft copolymer whose main chain is 85wt% ethylene and 15 wt% glycidyl methacrylate [column 4 lines 5-17]. After mixing the composition is cured at a temperature of about 200-225°C or more [column 3 lines 1-4] whereas the typical melting temperature is 254.5°C [Fig. 3].

9. Regarding claims 10 and 11, see the rejection over Furuta et al, discussed above.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Furuta et al (US 5,891,532 hereinafter referred to as '532) in view of Furuta et al (US 5,759,674 hereinafter referred to as '674).

12. '532 does not specifically disclose the molded resin films having a metal film formed in a circuit pattern.

13. '674 discloses nearly identical polymer compositions to those in '532. Including the amount of liquid crystal polyester and ethylene copolymer [abstract], the repeating units of the liquid crystal polyester [column 6 lines 19-43; column 4 lines 11-40], and the repeating units of the ethylene copolymer [column 6 lines 56-65]. '674 also teach that the liquid crystal polyester films may be laminated with a metallic foil to produce printed-wiring boards [abstract].

14. It is *prima facie* obvious to select a known material based on its art recognized suitability for an intended use. See *Sinclair & Carrol Co. V. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made a resin molded article of a liquid crystal polyester and an epoxy-group containing ethylene copolymer with a metal film formed in a circuit pattern and heat treated below the flow-beginning temperature

because '532 teach a heat treated liquid crystal polyester resin composition film and '674 teach the same composition with a metallic foil laminate for printed wiring boards. Absent any evidence to the contrary, there would have been a reasonable expectation of success of depositing a circuit patterned metal film on the resin composition film of '532.

International Search Report

15. WO 95/15360, cited as an X category reference in the International Search Report for PCT/JP05/04168, was not used for a rejection in this office action because it does not teach a heat treating step as claimed in the instant application.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL DOLLINGER whose telephone number is (571)270-5464. The examiner can normally be reached on Monday - Thursday 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MICHAEL DOLLINGER
Examiner
Art Unit 1796

/mmd/

/Randy Gulakowski/
Supervisory Patent Examiner, Art Unit 1796